

Advanced Engineering Taskforce Meeting October 19, 2012

Attendees:

Name	Affiliation	Location
Jim Flanagan	Illinois Chief Technology Officers	Heartland Community College
Scott Armstrong	Kishwaukee Community College	Heartland Community College
Andrew Bullen	Illinois State Library	Heartland Community College
Ken Davis	Sangamon County ETSD	Heartland Community College
Mike Dickson	Western Illinois University	Conference Bridge
Robert Dulski	Brookfield Zoo	Heartland Community College
Dennis Gallo	O'Fallon CCSD 90	Heartland Community College
Brandon Gant	CARLI	Heartland Community College
Rich Kulig	College of DuPage	Heartland Community College
Herb Kuryliw	NIU	Heartland Community College
Joel Mambretti	Northwestern University	Conference Bridge
Steve Menken	Illinois State University	Heartland Community College
Brian Murphy	Eastern Illinois University	Heartland Community College
Tracy Keller (Jim Peterson)	Bloomington Schools/Illini Cloud	Heartland Community College
Alan Pfeifer	Sauk Valley Community College	Heartland Community College
Mike Shelton	Southern Illinois University	Conference Bridge
Lee Gardner	Boone County	Heartland Community College
Brian Tobin	DeKalb CUSD 428	Conference Bridge
Glen Trommels	City of Rockford	Heartland Community College
Rob Zschernitz	The Field Museum	Heartland Community College
Lori Sorenson	Central Management Services	Conference Bridge
Kirk Mulvany	Central Management Services	Heartland Community College
Les Warden	Central Management Services	Heartland Community College
Frank Walters	Central Management Services	Heartland Community College
Deb Kelley	Central Management Services	Heartland Community College

May 18, 2012 Minutes

First thing on the agenda is the approval of the May 18, 2012 meeting minutes. Alan Pfeifer made a motion to approve the minutes. Andrew Bullen seconded the motion. The motion carried.

ICN Value Added Services (Frank Walters)

CMS has value added services that make us special. Some of those things include the ability to provide extra bandwidth for a short period of time at a moment's notice at no cost. We have 25 or 30 peers and we have 4 major internet providers that we use to provide services. It is challenging to balance those services. It isn't as easy as turning up a switch. We have to find a ISP that has bandwidth available, if not, we have to shuffle customers until we can find one. The issue we have is a lot of customers use us for baseline and purchase from other providers. We don't want to set aside egress for those events and then deny a customer that wants to purchase additional egress. If everyone used what they are provided, we would have issues. We are looking for some parameters. If it is a value added service, then it should only be provided to those that actually purchase egress. There are inequities in the network. We have customers that have paid a set up fee then pennies per month to have that available. Other customers have AT&T or Comcast and when things don't work, they call us for free bandwidth. All of this is reflected in the cost to everyone. We should probably keep the service since if it is not provided; it will be the school children that will suffer. Maybe we could charge for time and materials

for the non-paying ICN customers. It isn't fair to the paying customers. Typically, events are planned in advance, if that is the case, then we can provide the burstable bandwidth. If we had a 30-day notice, we would have ample time to configure, and then it could be free. We have a school district call us the morning of the event and wanted additional bandwidth. It took equivalent to a full day of work to make that happen. We always try to make it work for the schools. After all the work, they didn't even burst above their baseline. It doesn't have to be a huge fee. There are no commercial providers that would provide that service. It can't be left up to the user to find the extra bandwidth because they would have to be able to find someone that uses the same providers. The service is greatly appreciated. We used to buy more than was needed but with budget issues, we can't do that anymore. To buy an extra gig of bandwidth cost us about \$8,000 per month. The fee could be passed along to everyone which allows us to provide the service and keeps the fee lower. There isn't a problem with a "disaster factor" – unexpected and unavoidable. There is a problem with poor planning. They should pay time and materials. We should also consider if the ICN is the only provider. This is not to make money, just to let everyone know the costs and effort. One problem we have, even with the new FY13 rates, we are surprised that some of the big bandwidth users are saying it's great and like the credit, but ICN still costs \$1 more than Charter, Comcast or Cogent. So they spend their money with them and take the free allocation from the state. Then when the service goes down, they want ICN to supply it for free and everyone else just keeps paying the extra \$1. There is at least one example where it is important enough to the customer where they worked out a setup fee because they realize there could be an issue with the provider. This was also worked out prior to any problems. People will either pay on a per case basis or some sort of insurance policy. We need to have two choices on the phone – buy additional bandwidth up front or pay insurance. If they do neither, they will have to pay bandwidth costs and time and materials.

In 2014, K12 will start testing three to four times per year for about two weeks. There will be windows of potentially high bandwidth. Every student will have to test within a window of time. Districts would be willing to pay for bursts since they will be known, but will not need them during the remainder of the year. Since it is predictable, insurance could cover Insurance could cover those events also. If it could be worked out in advance, we feel it wouldn't require insurance. We can burst some of our egress contracts. Maybe we should meet with Chris Koch to get all the information. Jim will provide the State Board of Education contact that is heading up the project. Testing will only include math and language so far. Other subjects will be added in the future. We will need 100 meg per 1,000 students which may increase to 1 gig over the next 5 years.

Another issue is IPP4 address space. There are a significant number of customers that are using ICN and leave the circuit up so they won't have to change addresses because they can use them on AT&T or Comcast. Old customers are leaving and not returning the addresses because they are not technically leaving – they are still connected, but nothing is going over the link. They could use AT&T space which comes with the service and we would accept an LOA and agree to advertise AT&T's route if they give us permission. We would like to develop a policy to recover the addresses because before long a customer that wants to join the network and we will only have V6 addresses. Most customers keep the address because they are using BGP. The people that were able to negotiate an ASN for BGP were also able to negotiate additional address space. There are not many who have it. Since we pay annually for the addresses, maybe we could charge per address. There are eight customers who purchase 50 meg from AT&T and have a connect to us, they have ASN and T1 for backup, they don't pay for service. The only reason they have the connection is to maintain their addresses. They are baseline customers and do not pay for services. If a school has a T1 to ICN and has 6 IPP4 addresses, We could tell customers they are underutilizing their ICN services - not sure we can tell them we are taking them because they don't use

them enough. We should us go to customer and ask them to check.

One concern is they are getting service from us and another provider and using our IP addresses. Then when there is a problem, the RTCs are spending a lot of time on BGP issues that have nothing to do with us. Adds a layer of complexity and failures and there is no revenue to offset that cost. We have customers that when we trace to our address on our network, they go to the internet. If a customer uses our address on AT&Ts network, then AT&T wants us to fill out an LOA because we are the owner of record. This authorizes them to advertise the addresses to the internet. This also works in reverse. The issue comes whenever a customer does both. We could tell them we are going to start charging for them in a year.

Robin suggested we implement a router management fee if the customer is bringing in a second provider through the same router.

AET Membership

The ICN Policy Committee confirmed the following members to three year terms through 2015:

- Jim Flanagan, Illinois Chief Technology Officers
- Rich Kulig, College of Dupage
- Scott Armstrong, Kishwaukee Community College
- Michael Shelton, Southern Illinois University
- Joel Mambretti, Northwestern University
- Herb Kuryliw, Northern Illinois University
- Brandon Gant, CARLI
- Rob Zschernitz, The Field Museum of Natural History
- Glenn Trommels, City of Rockford

We have one new member, John Bandy from Memorial Health Systems in Springfield. John will be at the next meeting.

Ken Terrinoni, Boone County and Ryan Croke, Governor's Office both resigned their memberships due to time commitments.

We are always open to new member recommendations in underserved areas. It is good to get a new member from the health systems. Since CMS is highly involved, we decided we didn't need anyone from other state agencies.

ICN CMS Fiber Update

Project is progressing. Some of the highlights include:

- 588 of 700 miles of conduit has been installed
- 343 miles of around 1,000 of fiber has been installed
- Leases have been secured for 557 of 638 miles
- ISU has about 90 wireless miles.
- 85 miles are operational (Collinsville to Springfield) Litchfield High School is lit.
- The construction packages Kankakee to Champaign is done
- Conduit from Kankakee to Chicago has been installed.

- Kankakee to Will County has been completed.
- There are a few permits in Cook County that still need to be obtained. There are a few street crossings in the City of Chicago that are being worked on.
- Bloomington to Champaign and then south to Lincoln and north to Chenoa is mostly done.
- Champaign to Effingham will be done in 30-45 days.
- Effingham to Collinsville and Champaign to Springfield and Springfield to Quincy have all been started. The only package that hasn't been started is Quincy to McComb.
- There is a lot of activity in the Chicago suburban area with the laterals to the community colleges.

Much of our completion schedule is dependent on the fiber order which is being delivered sooner than initially planned. Earlier packages had delays but the later packages may get rolled up depending on the weather. We are lighting the fiber as we can. The equipment has been staged in parallel. Since the last meeting, we determined we will have the same contractors performing the inside plant construction, test and then turn it over to us. There are a few sites in Divernon and Mt. Olive that will be lit in the near future. Dupage, Elgin, Wabaunsee and Oakton will be turned up once splicing is ironed out. Splicing is not complicated on our end. We included detailed splice diagrams with the packages.

We draw money from the Feds as we incur expenses. In December the Federal Government plans to reduce everyone's budget. As far as we know, this will not affect our budget.

Because we have come in under budget, we have requested to expand our project. We identified other laterals and three additional backbone routes: Litchfield to Mattoon, Springfield to Pana, and Robinson to Newton. This request represents 160 miles of additional build. We had to identify a level of need, and any existing fiber providers. The catch is, it has to be done by July. Our engineering firm is working on designs. Any sites that represent of build off path that exists today, will only require a change order. New builds will have to be bid. We asked for more than we had left to spend. If approved we are not obligated to do everything in the expansion. We are also looking at asking for 100 gig hardware.

Regional Meetings

The regional meetings started today which brought up an issue. It would be nice if the AET meeting did not conflict with the Regional Meetings.

Library Systems

Robin and Lori met with the Library Systems. There may be interest in co-location and library services. the Library Systems have consolidated from 13 to 3 regions with shrinking budgets. They are trying to figure out how they will meet their bandwidth needs. They could move applications to the data center then they will be on the ICN backbone so the Systems won't have to keep increasing their bandwidth. CMS is willing to open services to non-state agencies. Brandon contacted the ICN regarding co location and was shocked at the low prices. Co-location at pop sites is reasonable. The state Data Center is staffed 24x7 and there are many more available options. Pricing has been the same for years. Power is our problem.

ICN Budget Appropriation

There is no new information on the ICN budget appropriation. There is \$6 million split between two funds. None of the money has been transferred to our fund, but it is not a crisis. There is a chance we could get money with the Budget Implementation Bill. We are pleading the case to try to get \$9 million.

Maybe Chris Koch could try to push to get the appropriation back up due to testing. There are many issues including the Illini Cloud and schools sharing data and data collections by schools. In addition, there are requirements the state is putting in including linking personnel data, student performance data, etc. Those things will have bandwidth implications. The data would be updated at least on a nightly basis. Lori will reach out to Chris Koch to see if he can assist us in any way. People listen when we can tie a request to an initiative. There is a lot of collaboration between many partners. The Aisle Project is working with the Illini Cloud and data centers in DeKalb and Bloomington as well as SIU and Northern. ISBE and the IRC Project in Northern are also heavily involved. Many institutions are involved in the assessment and testing piece. Brandon Williams is the contact at ISBE. The Governor's Office needs to understand that they need to fund the operation piece of the ICN. The AET and Policy Committee need to educate their constituents. If they take away funding, we will be back to where we were. The budget needs to be talked about at the regional meetings.

ICN eRate

We have a service provider identification number for healthcare. We are in the process of expanding our service so schools and libraries can file for internet services under eRate. If they purchase internet services from ICN above the credit, they will be able to list us as a provider. Robin is reaching out to the RTCs to get processes in place. He is hoping they can start responding to 470 requests by the end of the month.

Future Meetings

The January 18th and March 15th meetings are video/conference call meetings with locations in Chicago, Bloomington, Springfield, and DeKalb. The May 17th will be held in Bloomington.

Disaster Recovery

Are there any projects being worked on or planned. Auditors require off site recovery, but where do we put it. Our problem is also business continuity. Right now, people are FedExing hard drives to get it done. Should be a topic for the next meeting.

There is wireless technology in Bloomington it is point-to-point between towns not sure who will get the award. Once the award is made, we will share the information with the AET. We are using existing structures and are just leasing an amount of space. The actual technical specifications were tight. We are tuning to get the most bandwidth we can. Towns include Colfax, Hudson, and Arrowsmith. Unify has something called air fiber - you get two antennas that can do 1 gig between points 1 mile apart. It is based on Canopy technology. They hired a bunch of Motorola staff. We will put this on the agenda for the next meeting.

ISP LEADS

Historically municipalities have connections to ISP LEADS network for law enforcement data. ISP required total physical separation of everything pertaining to those connections to comply with federal CEJIS requirements. If you have a city hall with an ICN connection serving every city needs and then they have a separate circuit and router just for LEADS. CMS is still subsidizing the difference between the frame relay and T1 circuits. We are working with their IT Departments. They are open to sharing those connections but are concerned about the CEJIS requirements because they are being audited by the Feds to make sure the connections meet the separation and/or encryption requirements. We convinced them we can do this through logical separations. Most law enforcement departments do not have the IT staff to get it done. On the ICN side, we will talk to them regarding the technical architecture. Small communities are paying \$400 to \$600 per month just for the LEADS connection.

CMS is the owner of circuits and bills back to agencies.

Brian Tobin made a motion to adjourn the meeting at 12:12 PM.